



Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11) EP 1 224 999 A1

(12) **EUROPEAN PATENT APPLICATION**  
published in accordance with Art. 158(3) EPC

(43) Date of publication: 24.07.2002 Bulletin 2002/30

(51) Int. Cl. 7: B23K 26/00, B23K 26/06

(21) Application number: 00962819.9

(86) International application number:  
PCT/JP00/06569

(22) Date of filing: 25.09.2000

(87) International publication number:  
WO 01/23131 (05.04.2001 Gazette 2001/14)

(84) Designated Contracting States:  
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU  
MC NL PT SE

(72) Inventor: HAMADA, Shiro,  
c/o Sumitomo Heavy Industries, Ltd  
Hiratsuka-shi, Kanagawa 254-8010 (JP)

(30) Priority: 28.09.1999 JP 27407999

(74) Representative: Wagner, Karl H., Dipl.-Ing.  
Wagner & Geyer,  
Patentanwälte,  
Gewürzmühlstrasse 5  
80538 München (DE)

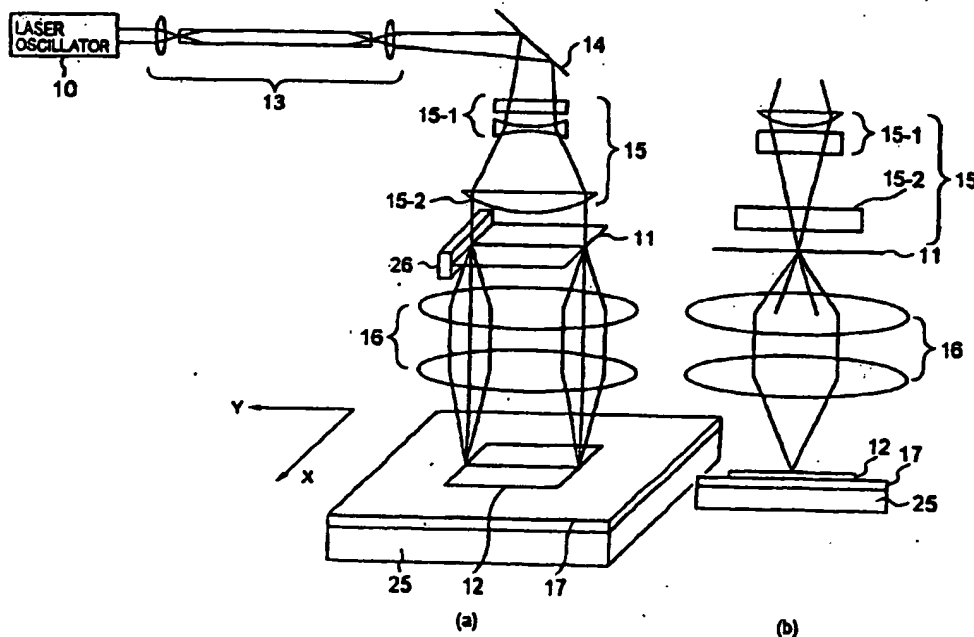
(71) Applicant: SUMITOMO HEAVY INDUSTRIES, LTD.  
Shinagawa-ku, Tokyo 141-8686 (JP)

(54) **LASER DRILLING METHOD AND LASER DRILLING DEVICE**

(57) It is provided with a homogeneous optical system 13 for transforming laser light from a laser oscillator 10 into laser light having a linear cross-section and a drive mechanism for synchronously moving a mask 11 and a printed circuit board 12, an irradiation position of the linear laser light being fixed, the drive mechanism

moving the mask and the workpiece so that the mask passes through the irradiation position of the laser light while the moving direction thereof is perpendicular to the extending direction of the linear laser light so that the mask is scanned by the linear laser light, the drilling defined by the mask pattern thereby being carried out to the workpiece.

FIG. 1



**BEST AVAILABLE COPY**